

We claim:

1. A connector for attaching a filter cloth to a filter plate in a filter press, comprising:
5 a collar portion configured to couple to the perimeter of a central opening on the filter cloth; and
a tab portion extending at an angle relative to the collar portion configured to engage a recess in the filter plate.
- 10 2. The connector of claim 1, further comprising serrations on an inner surface of the tab portion.
3. The connector of claim 1, further comprising a lock ring for securing the tab portion in the recess.
- 15 4. The connector of claim 1, wherein the tab portion extends substantially perpendicular to the collar portion.
5. The connector of claim 1, wherein the collar portion and tab portion are formed of a
20 material selected from the group consisting of rubber, thermoplastic rubber, plastic and mixtures thereof.
6. The connector of claim 1, wherein the collar portion forms an annular ring having a hole corresponding to a hole of the filter cloth.
- 25 7. The connector of claim 1, wherein the tab portion includes an outer surface that is inclined relative to a longitudinal axis of the connector, wherein the outer surface is configured to abut an inclined surface of the filter plate.
- 30 8. The connector of claim 1, wherein the collar portion has a substantially flat surface extending perpendicular to a longitudinal axis, which is configured to abut a first side of filter plate.

9. The connector of claim 1, further comprising a tab clip extending from the tab portion for engaging a bore of the filter plate.

10. The connector of claim 9, wherein the tab clip includes a first surface extending perpendicular to the tab portion, a second surface extending parallel to a longitudinal axis of the connector and a third and fourth surface extending at an angle relative to the longitudinal axis, wherein the third and fourth surface intersect at to form a point at an end of the connector.

11. A method of assembling a filter plate, comprising

attaching a first filter cloth comprising a filter media and a central opening to a connector ring comprising a collar portion and a tab portion extending perpendicular to the collar portion, wherein the first filter cloth is connected to the connector ring at the collar portion; and

engaging the tab portion of the connector ring with a recess in the filter plate, wherein the filter plate includes a feed port for providing a slurry to be filtered.

12. The method of claim 11, further comprising the step of inserting a locking ring in the filter plate to secure the connector ring against the feed port.

13. The method of claim 11, wherein the annular recess is formed on an inner surface of the feed port.

14. The method of claim 11, wherein the annular recess spaced from the feed port.

15. The method of claim 11, further comprising the steps of:

attaching a second filter cloth comprising a filter media and a central opening to a second connector ring comprising a collar portion and a tab portion extending perpendicular to the collar portion; and

engaging the tab portion of the second connector ring with a second recess in the filter plate.

16. A filter plate comprising:

a frame having a feed port and a first annular bore;

a first filter cloth secured to a first side of the frame; and

a first flanged connector ring for securing the first filter cloth to the frame, wherein the

5 first annular bore is configured to receive a portion of the first flanged connector ring to secure the first filter cloth to the frame.

17. The filter plate of claim 16, further comprising a second filter cloth secured to a second side of the frame; and

10 a second flanged connector ring for securing the second filter cloth to the frame.

18. The filter plate of claim 16, wherein the first annular bore is located in an inner surface of the feed port for connecting the first filter cloth to the frame in the vicinity of the feed port.

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19. The filter plate of claim 18, wherein the first annular bore is configured to receive a projection of the connector ring.

20. The filter plate of claim 18, wherein the inner surface of the feed port further includes a surface extending at an angle relative to a longitudinal axis of the filter plate for abutting an inclined surface of the connector ring.

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21. The filter plate of claim 20, wherein the inner surface of the feed port forms a protrusion ring of reduced diameter for stopping the connector ring.

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22. The filter plate of claim 18, wherein inner surface of the feed port comprises a first inclined surface extending from a first side of the filter plate, the first annular bore located adjacent to the first inclined surface and an axially extending surface adjacent the first annular bore, wherein the axially extending surface defines a protrusion ring of reduced diameter relative to the first inclined surface and the annular bore.

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23. The filter plate of claim 22, wherein the inner surface of the feed port further comprises a second inclined surface extending from a second side of the filter plate, and a second annular bore between the second inclined surface and the axially extending surface.

5 24. The filter plate of claim 16, further comprising a distribution ring inserted in the feed port for securing the connector ring in the feed port.

25. The filter plate of claim 16, further comprising a locking ring for securing a portion of the connector ring in the feed port.

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26. The filter plate of claim 16, wherein the first annular bore is located in a slot spaced from the feed port.

27. The filter plate of claim 26, wherein the feed port has an inner surface comprising an
15 axially extending flat surface.

28. The filter plate of claim 26, wherein the slot includes an inclined surface adjacent to the first annular bore and the connector ring includes an inclined surface configured to abut the inclined surface of the slot.

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29. The filter plate of claim 16, wherein the filter cloth has a feed hole having a perimeter corresponding to the feed port of the frame.

30. The filter plate of claim 29, wherein the connector ring couples to the perimeter of the
25 feed hole.

31. The filter plate of claim 30, wherein the connector ring has a diameter that is greater than the diameter of the feed port.

30 32. The filter plate of claim 30, wherein the connector ring has a diameter that is smaller than the diameter of the feed port.

33. A filter plate for supporting a filter cloth, comprising
a frame, and
a feed port formed in the frame having an inner surface configured to receive a
flanged connector ring for securing a filter cloth to the frame at the central feed port.

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34. The filter plate of claim 33, wherein the inner surface comprises a first inclined
surface extending from a first side of the frame, a first annular bore adjacent to the first
inclined surface, a second inclined surface extending from a second side of the frame, a
second annular bore adjacent to the second inclined surface and a protrusion ring between the
10 first annular bore and the second annular bore.

35. A filter plate, comprising:
a frame for supporting a filter cloth;
a feed port formed in the frame,
15 an undercut bore formed in the frame and extending in a radial direction for receiving
a flange of a connector ring to secure a filter cloth to the filter plate.

36. A filter cloth, comprising:
a liquid permeable filtering media for separating solids from the liquids in a slurry, the
20 filtering media having a feed hole formed therein for allowing passage of the slurry through
the filter cloth; and
a connector ring attached to an edge of the feed hole for connecting the filtering media
to a filter plate.

25 37. The filter cloth of claim 36, wherein the connector ring comprises:
a collar portion configured to couple to the edge of the feed hole; and
a tab portion extending at an angle relative to the collar portion configured to engage a
recess in the filter plate.